

Creating Infographics on Rocks and Minerals

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Standards	Key Assessments
<p>NYS Standards 4.3.1 Explain the properties of materials in terms of the arrangement and properties of the atoms that compose them. 4.2.1m Many processes of the rock cycle are consequences of plate dynamic 1.2j The characteristics of rocks indicate the processes by which they formed and the environment in which these processes took place. 7.1 The knowledge and skills of mathematics, science and technology are used together to make informed decisions and solve problems, especially those related to consumer decision-making.</p> <p>NGSS HS-ESS2-3 ESS2.A: All Earth processes are the result of energy flowing and matter cycling within and among the planet's systems. MSESS3. A Humans depend on Earth's land, ocean, atmosphere, and biosphere for many different resources. Resources are distributed unevenly around the planet as a result of past geologic processes.</p>	<p>Student constructs a model to describe the cycling of Earth's materials.</p> <p>Student constructs an infographic of their birthstone.</p> <p>Student interprets graphs and data tables to draw conclusions, make predictions, and to identify rocks and minerals.</p> <p>Explain how minerals are different from rocks and gemstones.</p> <p>Use a dichotomous key to identify minerals based on their chemical composition and observable properties.</p> <p>Use a dichotomous key and the physical properties of rocks to identify origin texture and mineral content.</p>
Curriculum Components	
<p>As part of an introductory lesson on rocks and minerals, I wanted to assess the knowledge students already had about minerals. I also wanted to spark their interest in learning more about minerals. In order to do so, I used a Likert questionnaire and an article on something relevant to their lives: the mineral content of cell phones.</p>	<p>A Likert questionnaire is a tool that uses scaling to obtain information/responses from participants. In this particular exercise, students agreed and disagreed with various statements. The focus of the questions ranged in topic and the goal was to engage them based on applicability to their lives.</p> <p>The Likert questionnaire was posted on a powerpoint and the teacher read each statement to the group. The classroom served as a scale, and students positioned themselves from left to right based on their level of agreement with each statement.</p>

Because the classroom was part of the tool for this activity, there was no opting out. The activity created discussion and the physical movement was engaging. Because there weren't right or wrong answers, it was a low pressure activity. Focusing on cell phones, something they use every day, produced buy-in for this unit.

[Likert questionnaire](#)

Students were given a task to research their birthstone. I shared a Planning Guide to provide direction for their research.

We read and discussed the task as a class, highlighting the key points of the task. This offered a starting point for students who shy away from assignments, and it expanded their considerations as they worked on the infographics. Students had choice on where to obtain this information, and they received suggestions that accessed multiple levels of understanding. They had access to computers which allowed them to work at their own pace and focus on what most interested them. Using the internet gave them an additional context to engage with science vocabulary and connect based on personal relevance.

<h2>BCAM JEWELERS</h2> <hr/>  <p>THIS VALENTINE'S DAY CUPID TRADES IN HIS BOW FOR A BAZOOKA</p> <p>DESIGN YOUR OWN JEWELRY USING DIGITAL GOLDSMITH COMPUTER –AIDED JEWELRY DESIGN</p>		<p>Task: You are a jewelry storeowner who is having a tough time in this economy. If you don't make a certain amount of sales this month it will be hard to pay the rent on your store and you will probably go out of business. To save your store, you looked toward your favorite stone for good luck! This stone is your birthstone. You decide on a new marketing technique to save your store. This marketing technique is focused around your birthstone.</p> <p>Marketing technique: You decided to create an attractive infographic about your birthstone.</p> <p>What should your INFOGRAPHIC INCLUDE?</p> <ul style="list-style-type: none"> • Identify your birthstone • Does your birthstone have a special meaning? • Is there a history behind your birthstone? • Does your birthstone have any mystical or mythical properties? (ex. Will it bring you strength, immortality, love, etc...) • How does the stone form? • What is the stone's chemical composition? • Where is it most commonly found? • Is your birthstone a mineral? If so, what are its common properties? (streak, luster, hardness, etc) • If it is not a mineral, can you explain why? • Compare your birthstone with a mineral from ESRT • Be creative • Include pictures • Remember, you need to save your business • Include resources
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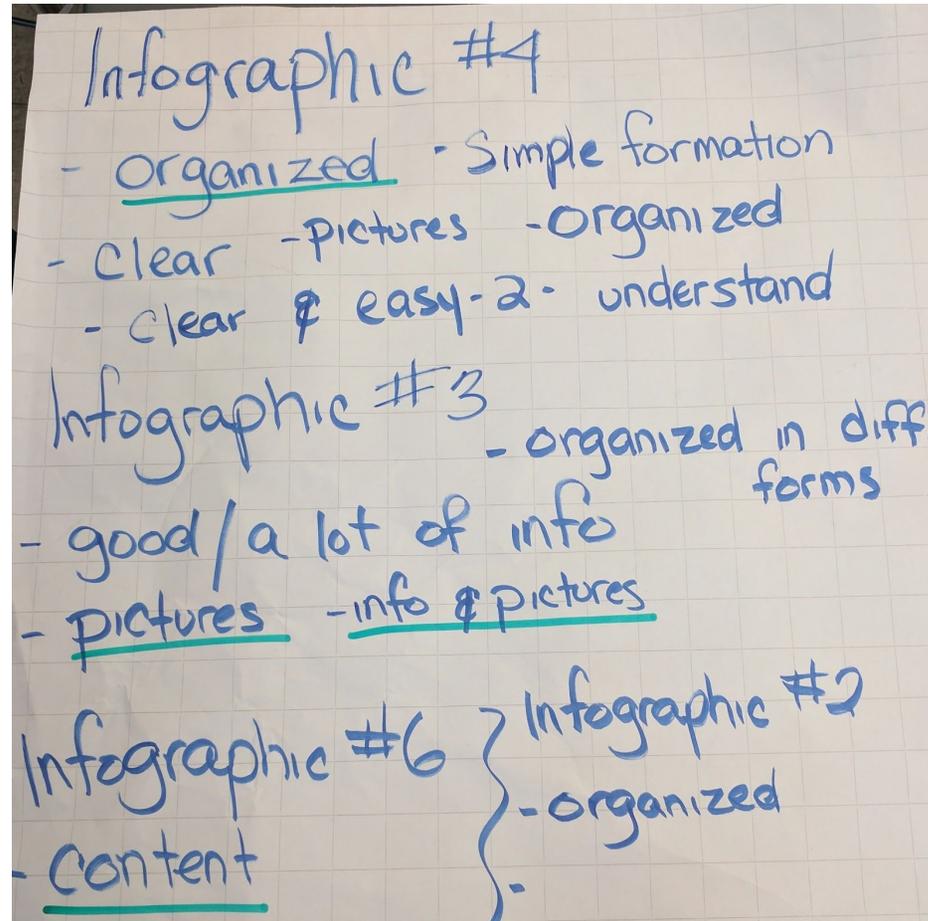
[Task Link](#)

Universal Design for Learning Strategies

While students were tasked specifically with creating an infographic, they were able to express their understanding in their own style.

Students were tasked to participate in a class project about birthstones. The direction was for each student to create an infographic. Using either Text-2-Text and/or Text-2-Self, the goal was to keep students more engaged in a lesson about minerals by incorporating a personal connection (individual birthstone).

To have students buy into the project, I challenged them to collectively create a class [project rubric](#). In groups of 4, each group was designated a category where they would collaborate on criteria for each section.



Next, through visually examples of possible end products, students were then invited to list all observable criterias noticed in each example.

Throughout the duration of the project, at the end of each class period, students were prompted to answer a free write journal about the progression of their project. Below, you will find the prompts that guided their project reflections:

A: Design Reflection:

How does the data you collected influence your initial design?

What was the feedback you received?

What changes will you make based off the feedback?

Is the layout of your infographic attractive to your future client? You want to save your store..

SHERI'S REFLECTION

The data I collected influence my design by making my design look organized and creative. The feedback I received was that I need to make my project more presentable and not boring and to make sure I don't have any missing information. Based on the feedback the changes I will make is to make my design more attractive and to have as many information that I need. No my infographic is not yet attractive but it will be once I figure out everything that I need to do.

KIA'S REFLECTION

i wanted my presentation to look like a blog about my birthstone and i wanna include graphs and pictures of how my birthstone looked before and after and a lot of other stuff. I learned that diamonds are cousins of graphites and that they are made from pure carbon. I learned that they form in the ground and not in caves. They are not formed like how we see them today they look like ice before they are carved.

Each student was able to choose their infographic website, design, and layout. The following are my case study's end products:

[Sheri's infographic:](#)



Birthstone Wonders: The Diamond



Through working with detailed instructions, guidance, and peer support, Sheri was able to not only self-motivate to complete this assignment, but it gave her confidence to explore beyond her comfortable level in regards to asking for help and being confident

[Kia's infographic:](#)

Diamond Birthstone Infographic



Diamonds are one of the most used stones all over the world.

jewelery such as necklaces, bracelets, and rings, often are made with diamonds. Diamonds are not rare stones they can be made within the surface of the earth. You can tell when a diamond is real if you put it through an x-ray and it does not appear. If it appears then the the diamond is not real.

Outside of the rubric, this project was individually paced; from the actual project to the reflections. Because of this, Kia was able to stay on top of her assignment and gain credit without any penalties due

to lateness or missing work.

[Latoya's infographic:](#)

LIFE OF A PERIDOT

A Peridot symbolizes strength. It's a thought to bring good luck. The gem variety of the mineral Olivine, it makes a lovely light green to olive-green gemstone. It's also a well-known and ancient gemstone that have jewelry pieces that dates back to Egypt time.

Peridot History
 Peridot dates back as far as the 2nd millennium BC. Before that the birthstone of August was actually Sardonyx Stone which is an variety of the silica mineral called chalcedony. Then, the stunning spinel, Peridot had been added becoming more bigger than Sardonyx as the birthstone of August.

How a Peridot Form
 It goes from Olivine to a Peridot from being in long periods of high temperature and pressure within the rocks, where they are mostly found. Slowly formed in volcanoes (hot places, deep within the earth).

More Information
 The Peridot chemical composition is basically a gem that's a little different from the olivine group. The olivine have the same crystal structure. Peridot is mostly found deep down in earth. The areas that you can find it in is Norway, South Africa, Brazil, Mexico, China, and so on.

Properties of Peridot
 Color: Only one color olive-green with a slight yellowish tint but if there is a certain amount of iron then it can change it's color to yellow being less iron, to olive being like in the middle, and a lot of iron where it makes the color brownish-green.
Streak: none
Luster: vitreous
Hardness: 6.5 / 7
Density: 3.34
Fracture and Cleavage: Conchoidal and Poor

This assignment allowed Latoya to stay in step with both her classmates as well as her own progression towards the deadline. Latoya was one of the first students to hand in their project.